Sustainable Site Design

Fall 2011 UFOMA

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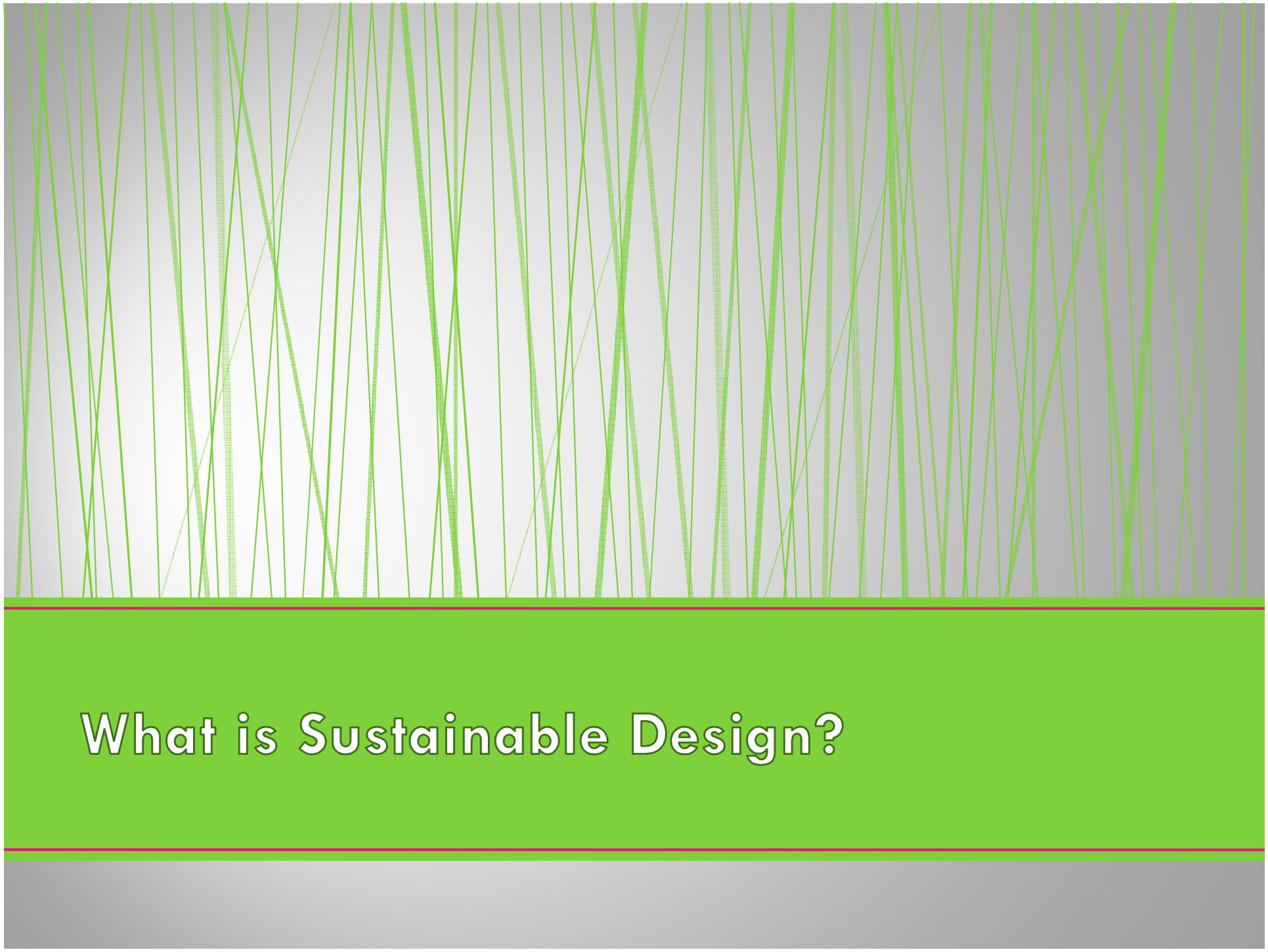
Our Conversation Today

- What is “Sustainable Design”
- A Simplified History Lesson
- Enter USGBC and LEED
- Concepts and Ideas for Sustainable Sites
- Sustainable Site Project Review


What is Sustainable Design?

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- Everyone as their own definition, but, typically there is a common thread. Sustainable design represents managing resources to ensure they are around for generations to come.
- In my own words:
  - Sustainability represents a **simplified approach to design** which **minimizes demand on resources** and **maximizes the end-user's experience.**

What is Sustainable Design?

So Koby, what do you mean by simplified? Let me ask, would you rather be here?

- High Traffic, Hard Scape, Poor Planning

Or here?

- Mass Transit, Green Space, Good Planning

My mom once told me "I keep my bell-bottoms because they will come back into style." Sustainability can be viewed in a similar way…what was once considered outdated is coming back into its' own.

- I don't know if this will ever be popular again…

- But this certainly is…


A Simplified History Lesson

A Simplified History Lesson

- Imagine the Earth in its' natural state - no animals, people, cars, buildings, airplanes, guitar amplifiers, etc.

- Kind of Boring…but, amazing none the less

A Simplified History Lesson

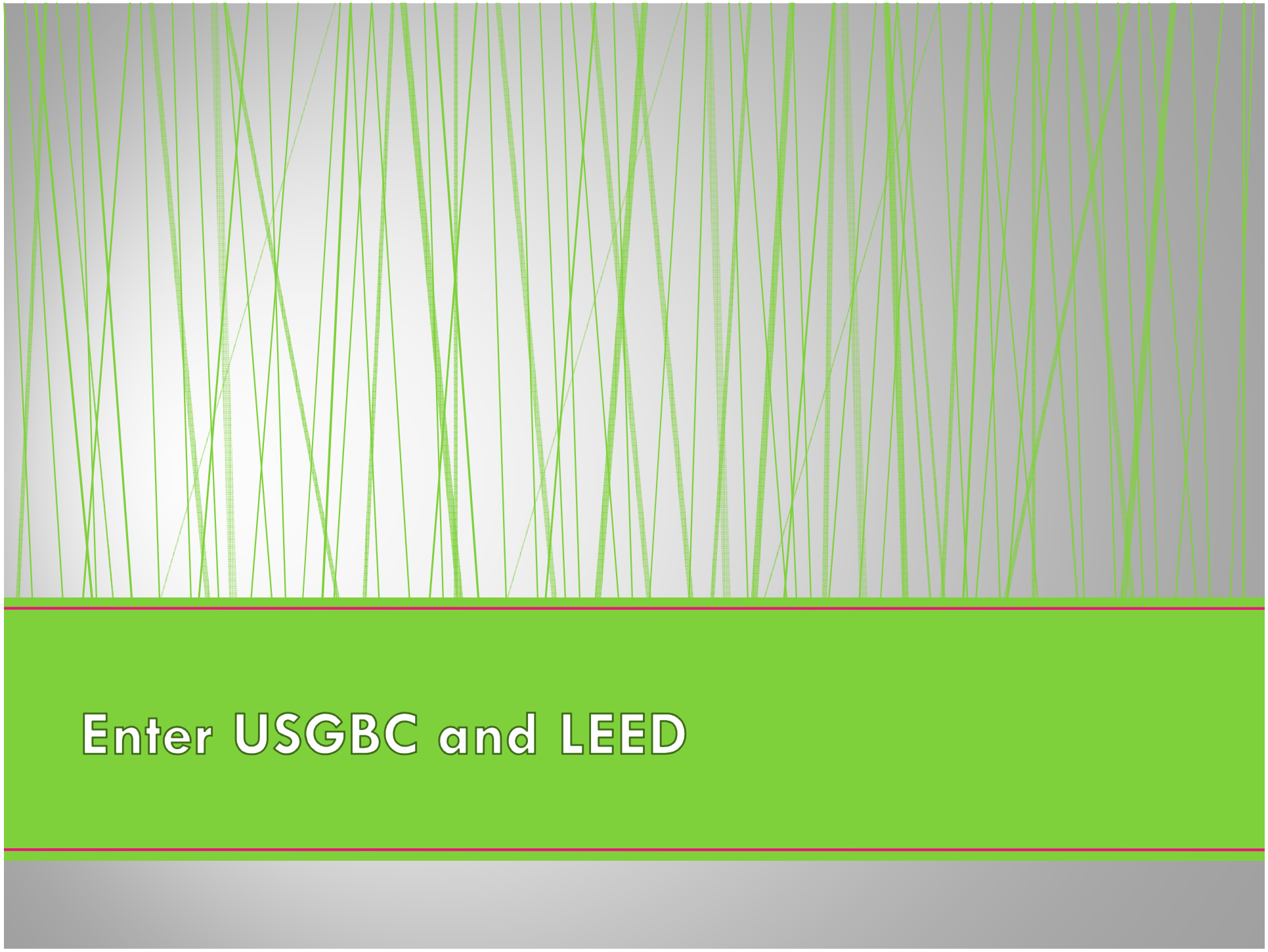
- Now fast forward a few million…or billion years

- WHOA! Amazing what ambitious humans can accomplish

A Simplified History Lesson

- How about a Balance?

- I wonder what this looks like at night?



Enter USGBC and LEED

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- USGBC is an acronym for…
  - United States Green Building Council
- LEED is an acronym for…
  - Leadership in Energy and Environmental Design.
- LEED is a rating system used by the USGBC to recognize projects which meet certain criteria…namely they are efficient building systems which strive to leverage what the environment provides to create a good place to be.

Enter USGBC and LEED

- Major LEED Building Design and Construction Categories are as follows:
  - Sustainable Sites
  - Water Efficiency
  - Energy And Atmosphere
  - Materials and Resources
  - Indoor Environmental Quality
  - Innovation in Design
- Specific to our conversation, Sustainable Sites has the following credits.
  - BMP/Pollution Prevention
  - Site Selection
  - Alternative Transportation
  - Site Development
  - Storm Water Design
  - Heat Island Effects
  - Light Pollution

Developing Sustainable Sites…

Land Planners

Landscape Architects

Civil Engineers


Concepts and Ideas For Sustainable Sites

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- Bio-Retention Basins
  - These provide an opportunity for water to collect and infiltrate into the natural aquifer. An added benefit is that the ecosystem used in these areas need organic material to munch on (specifically oils) so they are good in parking lot areas.

Concepts and Ideas for Sustainable Sites

- Bio-Swales
  - These provide natural pathways for water to route from one place to the next. In the process they filter out pollutants and slow water down, aiding in erosion control.

Concepts and Ideas for Sustainable Sites

- Porous Pavement
  - Gaining in popularity, porous pavement can be a good solution for several reasons.
    - Reduces Heat Island effects
    - All but Eliminates Runoff
    - Good Engineering Characteristics

Example of Pervious Pavement In Action

Concepts and Ideas for Sustainable Sites

- Water Efficient Plants and Landscaping
  - Significantly reduces water demand, minimizes the materials needed for water distribution all while providing a superior look to many alternative approaches.

Concepts and Ideas for Sustainable Sites

- Here are some more to consider…
  - Planning projects to maximize user experience and connectivity to the surrounding environment
  - Using recycled pipe materials for storm water conveyance
  - Using “Tar Sands” as an alternate for standard asphalt concrete


Sustainable Site Project Review

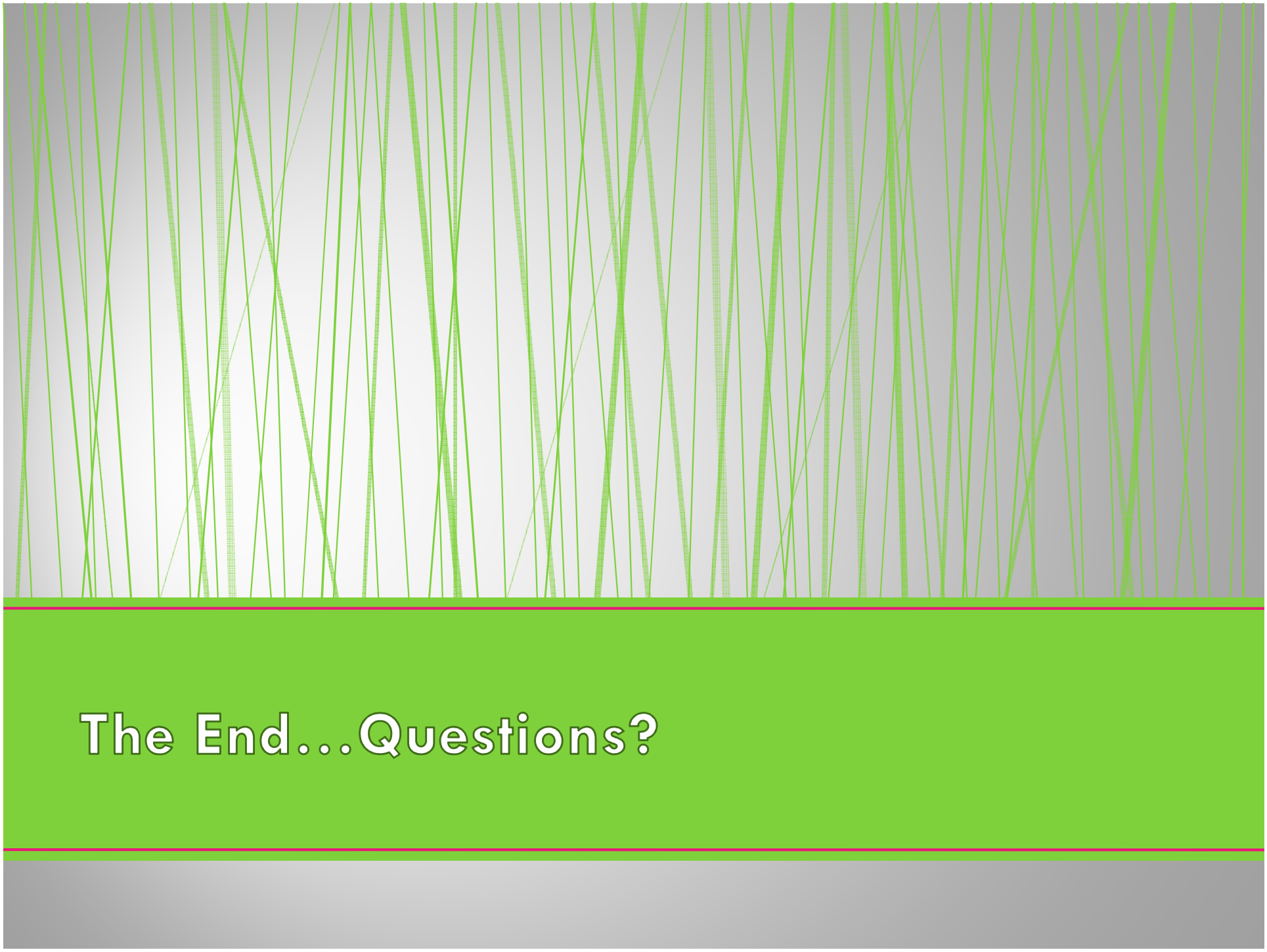
The University of Utah – HPER Mall

- Landscape Architect – David Garce, GSBS Architects
- Civil Engineer – Koby Morgan, Ensign Engineering (project was completed with NV5)

The University of Utah – HPER Mall

- About the Project
  - Client was interested in developing a "sense of place" where pedestrians, cyclists, boarders, vehicles and buildings could interface with the surrounding environment

- Sustainable concepts which were implemented on the site
  - Bio-swales
  - Bio-retention areas
  - Water Efficient Landscaping
  - Multi-use friendly environment (cyclists, boarders, pedestrians, etc. can all share the space)
  - Low heat island effect through the use of concrete pavements
  - Crushed granite in areas where structural support was needed, but, reduction in runoff was also desired


The End…Questions?